

AMENDMENTS IN THE CLAIMS

Please amend claims 8-11, 13, 17, 18, 21-26, 32, 34 and 39 by this amendment and newly add claims 42-47 by this amendment as follows:

1 1. (Original) An electrophotographic image printing method for an electrophotographic
2 imaging apparatus, comprising the steps of:

3 providing an electrophotographic imaging apparatus, the electrophotographic imaging
4 apparatus including: a charge roller; a developer roller; a laser scanning unit; a transfer roller; an
5 organic photoconductor; a power supply unit for supplying power to the charge roller, the
6 developer roller, the laser scanning unit, and the transfer roller; and a controller for controlling
7 the power supply unit, the charge roller, the developer roller, the laser scanning unit, the transfer
8 roller, and the organic photoconductor;

9 selecting a resolution for electrophotographic printing;

10 charging the organic photoconductor by selectively applying to the charge roller a charge
11 voltage corresponding to the resolution selected for the electrophotographic printing;

12 forming an electrostatic latent image on the charged organic photoconductor by the laser
13 scanning unit and applying toner particles adhering to the developer roller to the electrostatic
14 latent image to form a visible image; and

15 transferring the visible image formed on the organic photoconductor to a print medium.

1 2. (Original) The method of claim 1, further comprised of:

2 setting the charge voltage applied to the charge roller to be relatively higher in magnitude

for a lower level of the resolution selected than for a higher level of the resolution selected.

3. (Original) The method of claim 1, further comprised of:

the resolution selected being any one of 600 dpi. and 1200 dpi.

4. (Original) The method of claim 1, further comprised of:

applying a charge voltage of -1.35 kV to the charge roller as the charge voltage when the resolution selected is 1200 dpi., and applying a charge voltage to the charge roller of -1.4 kV as the charge voltage when the selected resolution is 600 dpi.

5. (Original) The method of claim 1, further comprised of:

applying selectively the charge voltage to the charge roller to reduce gray pattern level variation.

6. (Original) The method of claim 5, further comprised of:

reducing the gray pattern level variation at a low resolution by applying a charge voltage to the charge roller that is relatively increased in magnitude with respect to a charge voltage applied to the charge roller to reduce the gray pattern level variation at a high resolution.

7. (Original) The method of claim 1, further comprised of:

selectively adjusting the charge voltage applied to the charge roller corresponding to the

3 resolution selected for the electrophotographic printing to reduce image concentration variation.

1 8. (Currently Amended) An electrophotographic printing method for an
2 electrophotographic imaging apparatus, comprising the step of:

3 providing an electrophotographic imaging apparatus, the electrophotographic imaging
4 apparatus including: a charge roller; a developer roller; a laser scanning unit; a transfer roller; an
5 organic photoconductor; a power supply unit for supplying power to the charge roller, the
6 developer roller, the laser scanning unit, and the transfer roller; and a controller for controlling
7 the power supply unit the charge roller, the developer roller, the laser scanning unit, the transfer
8 roller, and the organic photoconductor:

9 selecting a print mode for electrophotographic printing;

10 charging the organic photoconductor by selectively applying to the charge roller a charge
11 voltage whose magnitude is dependent upon ~~corresponding to~~ the print mode selected for the
12 electrophotographic printing;

13 forming an electrostatic latent image on the charged organic photoconductor by the laser
14 scanning unit and applying toner particles adhering to the developer roller to the electrostatic
15 latent image to form a visible image; and

16 transferring the visible image formed on the organic photoconductor to a said print
17 medium.

1 9. (Currently Amended) The electrophotographic printing method of claim 8, ~~further~~

2 ~~comprised of: setting the charge voltage to be~~ the voltage magnitude applied to the charge roller
3 being a relatively higher in magnitude for a ~~when text mode is selected as a print mode~~ text mode
4 ~~as the print mode selected than for a graphics mode as the print mode selected~~ than when
5 graphics mode is selected as a print mode.

B1 (contd)
1 10. (Currently Amended) The method of claim 8, ~~further comprised of:~~ the print mode
2 selected corresponding to one of a text mode and a graphics mode.

1 11. (Currently Amended) The method of claim 10, ~~further comprised of:~~ the text mode
2 being of a relatively lower resolution than a resolution for the graphics mode.

1 12. (Original) The method of claim 8, further comprised of:
2 applying to the charge roller a charge voltage of -1.4 kV as the charge voltage when the
3 print mode selected is a text mode, and applying a charge voltage to the charge roller of -1.35 kV
4 as the charge voltage when the print mode selected is a graphics mode.

1 13. (Currently Amended) The method of claim 8, ~~further comprised of: applying~~
2 ~~selectively the charge voltage to the charge roller to reduce gray pattern level variation~~ wherein it
3 is a DC magnitude of voltage and not an AC magnitude of voltage applied to the charge roller
4 that is varied and dependent upon the selected print mode

1 14. (Original) The method of claim 13, further comprised of:

2 reducing the gray pattern level variation at a low resolution by applying a charge voltage
3 to the charge roller that is relatively increased in magnitude with respect to a charge voltage
4 applied to the charge roller to reduce the gray pattern level variation at a high resolution.

15.(Original) The method of claim 8, further comprised of:

2 selectively adjusting the charge voltage applied to the charge roller corresponding to the
3 print mode selected for the electrophotographic printing to reduce image concentration variation.

1 16. (Original) An electrophotographic imaging apparatus for electrophotographic
2 printing, comprising:

3 a charge roller;
4 a developer roller;
5 a laser scanning unit;
6 a transfer roller;
7 an organic photoconductor;
8 a power supply unit for supplying power to the charge roller, the developer roller, the
9 laser scanning unit, and the transfer roller;
10 a controller for controlling the power supply unit, the charge roller, the developer roller,
11 the laser scanning unit, the transfer roller, and the organic photoconductor;
12 means for selecting a resolution for electrophotographic printing;

13 means for charging the organic photoconductor that selectively applies to the charge
14 roller a charge voltage to charge the organic photoconductor, the charge voltage corresponding to
15 the resolution selected for the electrophotographic printing;

16 means for forming an electrostatic latent image on the charged organic photoconductor,
17 and for applying toner particles adhering to the developer roller to the electrostatic latent image
18 to form a visible image; and

19 means for transferring the visible image formed on the organic photoconductor to a print
20 medium.

1 17. (Currently Amended) The electrophotographic imaging apparatus of claim 16, further
2 comprised of:

3 the ~~means for charging~~ power supply unit selectively charges the charge roller with a
4 charge voltage that is relatively higher in magnitude for a lower ~~level~~ level of the selected
5 resolution than for a higher level of the selected resolution.

1 18. (Currently Amended) The electrophotographic imaging apparatus of claim 16, further
2 comprised of: the means for charging the organic photoconductor that selectively applies to the
3 charge roller a charge voltage to charge the organic photoconductor, the magnitude of the charge
4 voltage corresponding to the resolution selected for the electrophotographic printing ~~the means~~
5 ~~for selecting is for selecting a resolution of one of 1200 dpi. and 600 dpi.~~

1 19. (Original) The electrophotographic imaging apparatus of claim 18, further comprised
2 of:

3 the means for charging applies to the charge roller a charge voltage of -1.35 kV as the
4 charge voltage when the resolution selected is 1200 dpi., and the means for charging applies a
5 charge voltage to the charge roller of -1.4 kV as the charge voltage when the resolution selected
6 is 600 dpi.

20. (Original) The electrophotographic printing apparatus of claim 16, further comprised

2 of:

3 the means for charging selectively applies to the charge roller a charge voltage of one of -
4 1.4kV and -1.35kV as the charge voltage.

1 21 (Currently Amended) An electrophotographic imaging apparatus for
2 electrophotographic printing, comprising:

3 a charge roller;

4 a developer roller;

5 a laser scanning unit;

6 a transfer roller;

7 an organic photoconductor, said organic photoconductor being charged by said charge
8 roller;

9 an input unit allowing for input of a print job and for input of a print mode for said print

10 job;

11 a power supply unit for supplying power to the charge roller, the developer roller, the
12 laser scanning unit, and the transfer roller; and

13 a controller connected to said input unit and said power supply unit, said controller being
14 programmed and configured to control ~~for controlling~~ the power supply unit, the charge roller,
15 the developer roller, the laser scanning unit, the transfer roller, and the organic photoconductor,
(B1) said controller being programmed and configured to cause said power supply unit to apply either
(contd) a first voltage magnitude or a second and different voltage magnitude to said charge roller based
17 on said selected print mode for said print job, ; ~~means for selecting a print mode for~~
18 ~~electrophotographic printing; means for charging the organic photoconductor that applies to the~~
19 ~~charge roller a charge voltage to charge the organic photoconductor, the charge voltage~~
20 ~~corresponding to the print mode selected for the electrophotographic printing; means for forming~~
21 said laser scanning unit illuminating said organic photoconductor to form an electrostatic latent
22 image on the charged organic photoconductor, ~~and for~~ said developer roller applying toner
23 particles ~~adhering to the developer roller~~ to the electrostatic latent image on the organic
24 photoconductor to form a visible image on the organic photoconductor; ~~and means for said~~
25 transfer roller transferring the visible image formed on the organic photoconductor to a print
26 medium.
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1 22. (Currently Amended) The electrophotographic imaging apparatus of claim 21, ~~further~~
2 ~~comprised of: the means for charging the power supply unit~~ selectively charges the charge roller

3 with a charge voltage that is relatively higher in magnitude ~~for a~~ when said selected print mode is
4 text mode as the print mode selected than for a graphics mode as the print mode selected than
5 when said selected print mode is graphics mode.

1 23. (Currently Amended) The electrophotographic imaging apparatus of claim 21 ~~22~~,
2 ~~further comprised of: the print mode selected being one of a text mode and a graphics mode~~ said
3 power supply unit charges said charge roller with a higher magnitude of DC voltages when said
4 selected print mode is text mode than when said selected print mode is graphics mode.

1 24. (Currently Amended) The electrophotographic imaging apparatus of claim 23, ~~further~~
2 ~~comprised of: the means for charging~~ power supply unit applies to the charge roller a charge
3 voltage of -1.35 kV DC as the ~~charge~~ first voltage magnitude when the print mode selected is the
4 graphics mode, and the ~~means for charging~~ power supply unit applies to the charge roller a
5 charge voltage of -1.4 kV DC as the ~~charge~~ second voltage magnitude when the print mode
6 selected is the text mode.

1 25. (Currently Amended) The electrophotographic printing apparatus of claim 21, ~~further~~
2 ~~comprised of: the means for charging selectively applies to the charge roller a charge voltage of~~
3 ~~one of -1.4 kV and -1.35 kV as the charge voltage~~ said controller being programmed and
4 configured to cause said laser scanning unit to illuminate said organic photoconductor to form
5 said latent image on said organic photoconductor at a first power or a second and different power

6 based on said selected print mode.

1 26. (Currently Amended) The method of claim 1, during charging step, said controller
2 and said power supply unit automatically applying a different magnitude of DC voltage to said
3 charge roller based on said selected resolution immediately prior to and during the formation of
4 said electrostatic image on said organic photoconductor.

1 27. (Previously added) The method of claim 26, said laser scanning unit automatically
2 applying a different power during said forming step based on said voltage magnitude applied to
3 said charge roller.

1 28. (Previously added) The method of claim 8, during charging step, said controller and
2 said power supply unit automatically applying a different magnitude of voltage to said charge
3 roller based on said selected print mode immediately prior to and during the formation of said
4 electrostatic image on said organic photoconductor.

1 29. (Previously added) The method of claim 28, said laser scanning unit automatically
2 applying a different power during said forming step based on said voltage magnitude applied to
3 said charge roller.

1 30. (Previously added) The apparatus of claim 16, said controller and said power supply

unit automatically applying a different magnitude of voltage to said charge roller based on said selected resolution immediately prior to and during the formation of said electrostatic image on said organic photoconductor.

31. (Previously added) The apparatus of claim 30, said laser scanning unit automatically applying a different power during said forming of said latent image based on said voltage magnitude applied to said charge roller.

32. (Currently Amended) The apparatus of claim 26, said controller and said power supply unit automatically applying a different magnitude of voltage to said charge roller based on said selected ~~print mode~~ resolution immediately prior to and during the formation of said electrostatic image on said organic photoconductor.

33. (Previously added) The apparatus of claim 32, said laser scanning unit automatically applying a different power during said forming of said latent image based on said voltage magnitude applied to said charge roller.

34. (Currently Amended) A method for forming an image in an electrophotographic apparatus, said method comprising the steps of:
submitting a print job via software via a user, said print job comprising a type of print job input by said user via software;

5 automatically charging a charge roller to a magnitude of voltage based on the type of print
6 job selected by the user prior to printing;

7 charging a organic photoconductor drum via said charge roller adjacent to said
8 photoconductor drum;

9 forming a latent image on the photoconductor drum by illuminating said photoconductor
10 drum coated with toner via a light source, a power of said light source forming the latent image
being based on said magnitude of voltage applied to said charge roller; and

12 creating a visible image from said latent image via a developer roller adjacent to said
13 photoconductor drum, said developer roller supplying toner particles to the photoconductor drum
14 to convert said latent image on said photoconductor drum into said visible image; and

15 transferring the visible image to a print medium.

1 35. (Previously added) The method of claim 34, said type of print job being a resolution
2 of said print job selected by said user.

1 36. (Previously added) The method of claim 34, said type of print job being a selection of
2 text mode or graphics mode selected by the user.

1 37. (Previously added) The method of claim 34, a controller and a power supply unit
2 applying said magnitude of said voltage applied to said charge roller.

1 38. (Previously added) The method of claim 37, said controller causing said light source
2 to operate at an appropriate power level based on said magnitude of voltage applied to said
3 charge roller.

1 39. (Currently Amended) An electrophotographic apparatus, comprising:
2 an organic photoconductor drum;
3 a charge roller adjacent to said drum charging said drum;
4 a developer roller adjacent to said drum developing a ~~latent~~ latent image on said drum to
5 a visible image;
6 a transfer roller adjacent to said drum transferring said visible image on said drum to a
7 sheet of recording medium;
8 a light source producing a latent toner image on said drum enabling said developer roller
9 to convert said latent image into a visible image;
10 a graphical user interface enabling a user to cause said electrophotographic apparatus to
11 print a print job, said graphical user interface allowing the user to specify a type of print job; and
12 a controller controlling a power source to apply a magnitude of voltage to said charge
13 roller immediately prior to the formation of said latent image based on the type of print job
14 selected by the user, the controller causing the light source to operate at a certain power level that
15 varies based in the magnitude of voltage applied to the charge roller.

1 40. (Previously added) The apparatus of claim 39, said type of print job being a resolution

of the print job, said resolution selected by the user dictating what magnitude of voltage is applied to the charge roller and what power is applied to the light source.

41.(Previously added) The apparatus of claim 39, said type of print job being a whether said print job is text or graphics, said type selected by the user dictating what magnitude of voltage is applied to the charge roller and what power is applied to the light source.

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(Contd)

42. (New) An electrophotographic imaging apparatus for electrophotographic printing, comprising:

a charge roller;

a developer roller;

a laser scanning unit;

a transfer roller;

a photoconductive drum, said photoconductive drum being charged by said charge roller, said laser scanning unit illuminating said photoconductive drum to form a latent image on said photoconductive drum, said charge roller, said developer roller, said transfer roller and said laser scanning unit being disposed in operational relationship to said photoconductive drum;

an input unit inputting a print job and selecting a print mode for said print job;

a power supply unit supplying power to the charge roller, the developer roller, the laser scanning unit, and the transfer roller; and

a controller connected between said input unit and said power supply, said controller

15 being programmed and configured to control the power supply unit and cause said power supply
16 to apply either a first DC voltage magnitude or a second and different DC voltage magnitude to
17 said charge roller based on said selected print mode for said print job, said laser scanning unit
18 illuminating said photoconductive drum to form an electrostatic latent image on the charged
19 photoconductive drum, said developer roller applying toner particles to the electrostatic latent
20 image on the photoconductive drum to form a visible image on the photoconductive drum, said
21 transfer roller transferring the visible image formed on the photoconductive drum to a print
medium.

B1
(Cont'd)

1 43. (New) The electrophotographic imaging apparatus of claim 42, the power supply unit
2 selectively charges the charge roller with a charge voltage that is relatively higher in DC
3 magnitude when said selected print mode is text mode than for when said print mode is graphics
4 mode.

1 44. (New) The electrophotographic imaging apparatus of claim 42, the power supply unit
2 applies to the charge roller a charge voltage of -1.35 kV DC as the first voltage magnitude when
3 the selected print mode is graphics mode, and the power supply unit applies a charge voltage to
4 the charge roller of -1.4 kV DC as the second voltage magnitude when the selected print mode is
5 text mode.

1 45. (New) The electrophotographic printing apparatus of claim 16, said controller being

2 programmed and configured to cause said laser scanning unit to illuminate said photoconductive
3 drum at a first power or at a second and different power based on whether said selected print
4 mode is graphics mode or text mode.

Bo1 (cont'd)
46. (New) The apparatus of claim 16, said controller being programmed and configured
2 to apply either a first magnitude of DC voltage to the charge roller or a second and different
3 magnitude of DC voltage to the charge roller depending on the resolution selected.

1 47. (New) The electrophotographic imaging apparatus of claim 16, the means for
2 charging the organic photoconductor that selectively applies to the charge roller a charge voltage
3 to charge the organic photoconductor, the DC and not AC magnitude of the charge voltage
4 corresponding to the resolution selected for the electrophotographic printing.
